COMMITTEE WORKSHOP

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	Docket
Informational Proceedings and	)	02-IEP-01
Preparation of the	)	
2003 Integrated Energy Policy Report	)	
	)	

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET

HEARING ROOM A

SACRAMENTO, CALIFORNIA

WEDNESDAY, JUNE 11, 2003

9:41 A.M.

Reported by:
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Contract No. 150-01-005

COMMITTEE MEMBERS PRESENT

William Keese, Chairperson

James Boyd, Commissioner

STAFF PRESENT

Jairam Gopal, Manager, Natural Gas Unit

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David Maul, Manager

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Minon Marks

ALSO PRESENT
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I N D E X

P R 0 C E E D I N G S

COMMISSIONER BOYD: Good morning, everybody. I'll ask everybody to get seated. We're ready to start.

I'd like to welcome everybody. For some of you, it's welcome back from yesterday's hearing. For others, it is just welcome to another of the many many workshops, another day in our continuing series of workshops in support of development of the Commission's Integrated Energy Policy Report.

We started this particular workshop yesterday with electricity issues and today will conclude this workshop set on the subject of natural gas. Our timing coincidentally is perfect, I guess, for this subject in light of the fact that the media is full of natural gas all of the sudden.

I am Commissioner Jim Boyd. I'm chair of the Commission's committee to produce the Integrated Energy Policy Report. My fellow committee member is Chairman Keese. This committee was established by the Commission, as I indicated, to supervise, oversee, and then direct the preparation of the Integrated Energy Policy

Report which is a product of legislation, Senate Bill 1389, that was passed recognizing that it is up to California State government to establish or rather to insure a reliable supply of energy within the state and the need in that process to protect the public's health, safety, welfare, and environmental quality and to see that our economy achieves what it needs.

This report is designed to identify emerging trends related to energy supply, demand, and to talk about conservation, and also to discuss the public health and safety aspects to help provide for State policy actions.

This Integrated Energy Policy Report is to be submitted by us this November, and then every two years is to be resubmitted. There is even provision for, in effect, annual updates, so it is part of what the legislature saw after at least the electricity crisis, a continuing process of keeping our hand on the pulse of energy in the State of California.

We have had a series of workshops for those of you who are following this, and there will be other workshops. We've discussed a host of issues related to energy, and there will be

others.

We have discussed world oil, we have discussed electrical efficiency, hydro-power, environmental concerns, air quality, public health, and of course yesterday electricity infrastructure.

Tomorrow, for those of you who follow this series, there will be yet another workshop in this room. Somewhat a unique workshop, it's co-sponsored by the Commission and the League of Women Voters. It is to talk about the subject of energy system futures. It is an educational town hall workshop kind of a process that should be quite interesting.

I think without a doubt, today we are going to focus pretty heavily on the natural gas situation. Chairman Greenspan of the Federal Reserve has made natural gas suddenly a world topic with his announcements yesterday relative to the future, his visions of the future of natural gas, and his heavy endorsement of something I know Chairman Keese and I have talked about, had knowledge on, but don't get a lot of traction, and that is the necessity to address LNG. All of the sudden, that is a popular subject and one that can

be talked about and one I expect to hear more about today.

The last years have been quite a roller coaster for natural gas in the world, in this country, and in this state. We have been exposed to extreme vulnerabilities in terms of supply and price. Price volatility is with us big time in the gas arena.

For the better part of these three years the working group that the Governor called for or during the electricity crisis, which consists of all the state agencies that have anything to do with natural gas and have kind of been co-chaired by Secretary Nichols and myself, have been watching natural gas pretty closely and this Commission has basically provided the bulk of the staff for that activity. This is very relevant to where we are going.

At the present time, we kind of view the vulnerabilities that we experience as a very significant concern, and we need to assess in this process whether the administrative and legislative and regulatory actions and private sector actions that have taken place already are adequate to address these vulnerabilities, or whether we will

find ourselves in the position of recommending more policy issues and policy actions to be taken to assure that the nation's State of California has adequate gas supplies to fuel its economy.

With that, I'm going to ask Chairman Keese for any remarks he would like to make to open the session and following that, we will turn it over to Al Alvarado who is waiting patiently at the dias over there to give you an overview of today's workshop and then to take you through today's agenda.

Chairman Keese.

CHAIRPERSON KEESE: I'm just pleased to see the broad participation we have today, and I will emphasize what I've emphasized in some of the previous meetings that we have to start with baseline, we have to start with projections, but we end up with recommendations.

These recommendations are going to be coming from the Energy Commission as described hopefully with the input for all state agencies because once adopted by the Governor, this Integrated Energy Policy Report is to be the policy framework for decisions by all state agencies moving forward.

Natural gas is obviously a very important one, and I would emphasize that we seek from you input as to what our recommendations should be. We're not trying to have Energy Commission recommendations, these are recommendations from the body politic, all state agencies, all stakeholders, the recommendations for what California's policy should be will move forward.

Obviously, we are talking about natural gas. This is an integrated report. We have the other things that Commissioner Boyd has mentioned that tie in. Natural gas and electricity are very closely ties, clearly it is also tied to the environment, so let's get started.

COMMISSIONER BOYD: Excuse me, Chairman Keese reminds me of something I neglected to mention that is very important to both of us and to this Commission, and he properly hit upon the collaboration/cooperation between state agencies.

The recently approved and released Energy Action Plan of the three major energy agencies in this state, very definitely underscores one, the cooperation that's needed to address energy, and two, it identified natural

gases, a major ingredient of issues, let's say, that we need to address. Just to underscore, again, the collaboration/cooperation that is both necessary and is taking place between state agencies to indicate that this is a priority issue.

Another point that I neglected to mention is just a week or so ago we had a workshop in this building co-hosted by the Department of Conservation's Division of Oil, Gas, and Geothermal Resources and this agency to examine what steps can be taken to expedite and expand the development of California's own domestic gas supplies that took place that will enter into our debate on this subject.

With that, Al, take it away, please.

MR. ALVARADO: Good morning, my name is Al Alvarado. I'm the Project Manager of the Electricity Natural Gas Report, which is one out of three subsidiary reports that are being prepared for the Integrated Energy Policy Report.

The purpose of today's hearing or workshop, excuse me, is to discuss and receive public comments on the findings of the staff on the preliminary Natural Gas Market Assessment

Report that was posted on the Commission website on May 27.

The analysis that is to be presented today builds on the staff draft report that was subject to another Integrated Energy Policy Report Workshop that was held back in February.

Staff has updated the assumptions used in the natural gas systems analysis based on public comments that we have received from that workshop.

The staff energy systems studies evaluate the implications of a number of important uncertainties on both the integrated electricity and natural gas infrastructure.

As Commission Boyd indicated yesterday, we had a workshop on the staff report on the electricity system. The primary goal is to identify the key factors that stress the energy system and to determine if there really is a need for development to mitigate any potential supply shortfalls in the next decade.

The discussion and any technical feedback that we do receive in today's workshop and during the several other public events will serve to refine the staff analysis of the energy

systems, and we will also go into the preparation of the Electricity and Natural Gas Report.

The draft of the Electricity and Natural Gas Report is targeted to be released towards the end of July, and from there on we will be holding other public events to review the findings of that report.

We are really interested in hearing from you today, and we are having this discussion recorded, so the purpose is just to track your comments, and it will help us digest a lot of the discussion today.

This will require you, if you have any comments, please come forward and speak into the microphone, identify yourself, and please give your card to our court recorder. This will help us identify you in our transcripts.

We are also open for additional comments based on the discussion we have today. If you do have any written comments, please do file them by June 20. Actually, the sooner the better because we are already scribbling away trying to write the draft which was the Natural Gas Report.

Let me introduce Jairam Gopal. Jairam is responsible for the Energy Commission's natural

gas analysis as well as for today's workshop.

MR. GOPAL: Good morning Commissioner's, ladies, and gentlemen. Welcome to the workshop on the Preliminary Natural Gas Market Assessment.

This assessment has been prepared in support of the Electricity Natural Gas Report, which will then provide all the support necessary for the Integrated Energy Policy Report.

In addition to all the --

UNKNOWN SPEAKER: Raise your microphone a little bit.

COMMISSIONER BOYD: Jairam, as Bill and I have learned painfully here from days and days in this room, you've got to look at the microphone, speak right at the microphone. If you stray to the side at all, it goes dead and the audience can't hear you. This is "technology".

MR. GOPAL: All right, advice taken. How is it now?

UNKNOWN SPEAKER: Very good.

MR. GOPAL: Thank you. As I said, the Natural Gas Policy Report, the Electricity Natural Gas Report, and the Integrated Energy Policy Report will contain the recommendations for policy for energy in California.

As the Commissioners put it, your input is also very important, so communication is the key for our success. I hope you will all march with those orders with us.

Basically, I want to welcome you to the world of natural gas. This is what we live in, this is what we breathe, and this is what we do everyday.

First of all, in preparing the report, there are a couple of disclaimers that we also take on from time to time. You will read enough of this in the report. I want to acknowledge the natural gas unit. I'll mention some names later on, but there are others also who have helped significantly in getting this report done.

The electricity office and the demand office have provided significant input. There has been an integrated approach as we have had in the past, but it's more vocal in this round. We have insured that there is a lot of integration in the type of scenarios that we have done. I am sure that we have already heard about it in some of the other workshops that you have attended.

I want to thank them to: Lynn Marshall, Angela, and David from the Electricity and Demand

office are the ones that we have been constantly bugging to get information or give information and make sure we succeed.

In the gas unit, Dave Maul is the Office Manager. He is sitting back there. We have Todd Peterson, Marta Digiawan, Leon, and Bill is not here. Oh, Bill is back there and Jim Forbe is over there. We have a new entrant in our office, Mike Purcell. You will be seeing a lot of him, especially when we start talking about natural gas resources.

We have students that provided immense help to us in our process, Lauren Prescott is here. Ty Graywold and Pam Yu, I don't believe they are here. My apologies if I missed any names. I am just the messenger, so you have to bear with me.

What are we doing here? I just wanted to go through a very very brief discussion of what forecasting is. We have learned forecasting in a variety of ways. Some people say it is just a science, there are others who say it is art. Some people just look at all the forecasting extrapolation of something. There are a lot, of course -- there is one more item I forgot, and

that is crystal ball gazing. If you don't look in here, you are not going to get anywhere. I'm going to keep it here, so if you want to look at it sometime, you can come up and do it.

There are ways and means by which we do forecasts, there are different compasses to be served. We are reaching now a point, and this was brought to us by one of our favorite utility companies twelve years ago, they were ready to forecast for food, and at this point, we are ready to forecast for food too.

Let's go a little further into what forecasting is. The first one is -- this is more of a business type approach, a scientific approach. It talks about TAS buying, it lifts prices back to six bucks, and at the close, there are a lot of sell orders, blah, blah, blah.

There is this method which is more of dock boat kind of approach. You can pick your prices and see what the forecast comes to. There are ways by which you can do this. The third is more of an art format, you know, you can swan dive to some other number, and then there is a gut wrenching loss of 21 cents.

There are a variety of ways to forecast.

Thanks to some of the unknown traders who have contributed to this one.

Finally, who should be forecasting? If you are faint of heart, please don't attempt it. Having said that, before I conclude my presentation, I want to go through a couple of items here. One is findings of the assessment, what did we do in the study. We all know we have talked about uncertainties in the gas market. How have we, in this approach, addressed uncertainties? Finally, what are the findings in our analysis that will provide food for thought, in terms of policy drivers?

Basically, in our analysis, we look at demand, we look at supply, and then we look at price. These things go hand in hand, but I'm going to march through them one by one.

I'm going to be mentioning some very brief statements here. There is a lot of detail in the Market Assessment Report, which is available in the front here. It is also on our website, and I am sure everyone read that report, page one to page last, so this will all be old news for you.

Please, we look briefly at demand

projections. Natural gas demand for residential, commercial, and the industrial is done in-house at the Commission. For the electricity, we do in-house projections for the entire western states, the WECC region.

The rest of the information comes from either EIA or from Canadian sources such as CERI and others.

What is the growth that we look at for the next ten years? This one shows gas consumption, the majority of the growth is really seen only in the electricity generation market. The residential, commercial, and industrial do not show significant growth over this time period.

Supplies is I think the core of natural gas discussion these days. There was a time when everyone thought supply was going to be depleted very soon, and then there was this discussion about so much gas being there. We talked about a gas bubble and that really brought the prices down. That was true, for ten years we enjoyed natural gas at two bucks or $2.50 Mcf, that was great.

The last three years it has somehow been a rollercoaster, so what do we see? It's not that

the reserves are gone, it is not that the reserves are depleted, it is just that it is costing a lot more to produce that same Mcf of gas. That is what we read, that is what we see, and that is what we understand from a lot of discussions. I am sure we will be talking a lot more about it.

One of the things that we have seen in the past is that there is a revision of the proved estimates. Proved means the gas that is already proved, the wells are drilled, and it is ready to be produced. That quantity of gas has been revised every year by the industry and the government agency and EIA. It is published.

Why is it done? Because the estimates change due to changes in technologies due to a better understanding of the pools, due to infill drilling.

There is a variety of reasons under which these estimates do change, and historically it has been shown, the analysis shows us, that this amount has always increased. Basically, every year there is more gas that has been proved than in the past, in spite of what was produced.

That does not mean that gas is very cheap, it just probably means now that it is going

to take a little more to pull that same gas out of the ground. The increase in the reserves is what we are presenting now with analysis as a reserve appreciation.

We have looked at historical reserves, and we have actually assumed a significantly small amount for that compared to what we see in there year to year increase, so that is one of the bullets, it says that the assumptions are conservative compared to historical increases.

What do we see in natural gas production over the ten years? We find that both the Canadian and lower 48 production is going to increase over these ten years. The other category here includes fuel switchable LNG imports at the Gulf and Eastern Seaboard.

In our basecase analysis, we have not assumed a LNG facility on the West Coast yet, probably in the next round, depending on how discussions will go forward and how LNG will be embraced in California and the West Coast. For the time being, we limit the LNG on the West Coast, two scenarios which I will address later.

Supplies to California, a very big question. We have talked about this quite some

time. Here are some estimates of what we project for California over the next ten years.

California's production will remain flagged, but the market share will go down over a time frame the current 15 to 18 percent we expect it to drop to around to 12 to 13 percent.

Canadian import, it will increase overall, but the fraction will be really almost the same. The basic swing supplies are the southwest and the Rockies. The Rockies will be increasing significantly over this next ten years.

We have seen increase in pipeline capacity to the Rocky Mountains, and I think we have shown in the past for the last ten years, that Rocky Mountains is a very critical and very beneficial source of supply for California.

We have been seeing it over the last ten years, and I am sure we will see it in the future too.

The Southwest again, it is still the major supplier of gas for California. The marketshare for the Southwest is going to drop a little bit over time, but it will continue to be a major supplier.

Finally, we have talked about supply and

demand when it comes down to price. What are the things that we are looking at in price? This chart is there in the report, and it is picked right out of the report, so even the numbers are identical. If you cannot read the numbers, you can look in the report.

Basically, we start off with wellhead price projection, take that through the gathering and other charges that are necessary to get it to the pipeline quality.

It comes into the pipeline as, basically, this together. We will present our reports, wellhead price, then you have the gas entering the pipeline, you have a transportation charge on the pipelines.

Basically, you are looking at interstate pipelines here. When you come to something that is synonymous with border price, and from the border price, you have the distribution costs. It could be additional interstate pipeline, or it could just be the utility costs that will take it to the final end users.

This represents the prices for the three utilities, major utilities in California, PG&E, So-Cal Gas, and STG&E. It shows the historical

right up to this point, and then the projections for the future.

This is a system wide average, end use price, you can see the prices going over time. This was a peak we experienced in 2000. We have not turned in any actual numbers for 2003 into the analysis yet, so that will certainly make a difference when we do it.

Let's go a little back and look at the basecases of wellhead price projections. This one shows the historical, the average annual wellhead price for the lower 48 states, and this is the basecase projection.

As we see from 2003 onwards, the basecase projection in this round shows a slightly increased growth rate in price. This is compared to the previous projections. We have a pretty broad range for the high and low prices. We will talk about the scenarios later on.

The high price and the low price provide the boundary for gas prices, even though the base case is easier. Our assumption here is that because of market conditions and changes in the market place, the prices are going to -- excuse me, the prices will be going higher and maybe

dropping lower over the time frame.

You know very well there is a seasonal and daily price volatility. Even when you consider it on an annual average, I am sure we are going to see fluctuations.

The major assumption that we make in our high price and the low price in that area is that those prices are not sustainable. That is, you will never find the price to be in this range for a very long time.

What happens is, there are market forces which will tend to react to such price change, be it higher or lower. There is going to be some reaction on the market side, which will then again change our prices.

It is our hypothesis that prices are going to be going up and down in this range, but the turn towards a baseline is a reference line.

This is something we do frequently. We've got to look at what we have done in the past, what were the results that we achieved, and why were they. This chart sort of compares the projections on the natural gas outlook we have done for the last twelve years.

We can see that in the '91, '93 time

frame, the price rises significantly robust, and then I think there was a lot of talk about how the gas bubble is going to impact the marketplace and our price dropped here in the '95.

In the '98 outlook, we were significantly low here because there was really no action in the industry. There was notion in the industry that prices were going to simply rise.

Since '98 things, you know, have changed, 2000 and 2002 outlook we have been here in this dark blue one is the correct one. We are not the only ones who have gone through this roller coaster. Comparisons do show that there is this trend in the industry that people look at.

What are the surplus sources available, what is the cost going to be for these sources? I think Greenspan's testimony, it's of (indiscernible) how these technologies have changed, how they provided low prices in the past, but probably that is something that is not to be relied on in the future. That is something we need to address continuously.

This one is a slightly different kind of a price presentation. We are trying to make sure that we represent apples and apples or oranges and

oranges here. We have here the basecase, the high and the low case, so it shows the boundary of our analysis. These colors here show the Henry Hub closing prices for each month.

We have November of 2002, January of 2003, March of 2003, May of 2003, and the blue line is June of 2003. In six to eight months, you see how much volatility there has been in the price. These are all monthly prices if I am correct. Mark says yes, so they are monthly prices here.

You can see how this changes. You have these greater peaks that are clearly marked by how the Henry Hub price is moving. One of the things that we need to note here is that though there is so much of volatility here in 2003, in the long run we find that these estimates do come up to one point.

There could be a lot of reasons for it. One is that probably the market knows what is going to happen in five or six years. The other is that maybe the because the number of trades you have in the future are certainly far and few in between, so you don't see so much of the volatility because the market is not really active

in those years.

One of the things that we see there is even if you look at the Henry Hub futures, you will find the strand.

In this round, knowing that there is this very big difference between what our long term model does versus what the current Henry Hub prices are doing, we do make some changes in the assumptions in the electricity analysis, for instance.

For two years we assumed a calculation based on Henry Hub prices to be used in the analysis. David Ritterer went through that discussion yesterday.

Having said that, I just want to make another statement about the type of forecast. As I said earlier, this one is long term based model, so we are looking at how the gas prices will trend over the longer term time period.

The methodology is really not applicable to looking at seasonal or daily spot prices, for example. This looks at a system wide annual average type of information. It is critical that we do short-term analysis, we are in the process of doing it, and we will probably talk about the

results from that at a later time.

Basically, long-term average models that we have been using now provide these long-term prices. These do not reflect a daily peak as I said before. going over the same information here. The short-term market analysis will be surfaced from our work pretty soon.

Once we have talked about supply, demand, and price, we then come down to the topic of infrastructure because that is the one which really defines what is going to happen in the marketplace.

Pipelines and capacities, you know, do we have enough capacity, do we have storage, and other issues. In this analysis, we focus more on overall capacities serving the state.

As I said, in the long-term, we don't include the storage numbers, but that is something we do off line to address how the deliverability and supply availability will change on a short-term basis.

One of the things that we notice, the natural gas grid across the North American Continent, which is Canada, U.S., and Mexico is all integrated. You have the ripple of changes in

one place taking place on the other.

For example, if you go to the crisis period in 2000, California prices really went screaming up even though the national did not.

What happened in 2003 was the very cold wave in the Northeast took prices up there to significantly higher levels just as we are experiencing in California. California did feel the tail end of those prices. Our prices, even though we did not utilize our pipelines fully, even though the demand was not very high in California, prices were still relatively high.

That is what I mean by the ripple effect across the nation.

Based on the analysis, we have come up with two charts here which address the utilities annual demand of consumption versus their receipt capacity.

This is for SoCalGas, you will find the receipt capacity went up by 385 over the last three years, taking them from 3,500 MMcf per day to 3875 MMcf per day. We have not presumed any additional capacity increases over the next ten years in this chart.

Looking at the demand of residential,

commercial, and industry are fairly steady, fairly flat. The power generation, the gas demand that will be served by SoCalGas, has not changed too much over time. It goes up over time for the ten years, we find very significant capacity that is available for the utility.

This is based again, as I mentioned before, on an annual average basis. We look at monthly, daily picture, you are going to see something that is very different. These lines are going to be significantly volatile and not flat.

Let's take a better look at the surplus corridor now that serves SoCalGas region. You have the El Paso Northern System and the Transwestern coming up here. You have the El Paso South and even the nearly not constructed but converted All American pipeline comes from the Texas region to serve California at the Blythe point.

You have the Questar coming up from the San Juan Basin. Here you have the corridor, they all meet at this point at Daggett, and then Kern -- this is the Mojave line, Kern and Mojave will join up and reach up to Antioch region.

This one is the portion of the All

American pipeline that is slightly, I think, missing its point. It should probably terminate on here. We'll have information on this also later.

The North Baja pipeline that has been newly constructed is right here. It has been in operation since December of last year. Current expansion runs parallel to the old or current pipeline.

How do we see capacities on these pipelines changing over the next ten years? We will find that the El Paso South has not been running at its full capacity, so we still have plenty of capacity available on this line.

If you go to -- Let's go to Havasu last. Looking at El Paso North Transwestern, flows have been fairly full. There is significant growth, and this is one of the concerns that we have always had with regard to what is happening in the Southwest demand numbers compared with the pipeline capacity that is available.

This is the San Juan crossover. That is the amount of capacity that is available to take gas from San Juan Basin down into the Permian region from where it could flow into several

regions.

This is California's portion of the All American Pipeline that I talked that about provides a significant amount of flexibility to move gas in the state. We find that in 2003, of course, there should be none because the pipeline isn't constructed yet. It should be in operation in July of 2004, so we find that it is going to fill up by 2008 and 2013.

Much of right here is the legend. The red bars are for 2008, green bars are 2013. This increase in capacity is a concern to us because there is a significant amount of demand in the Arizona/New Mexico region, principally in the power generation area.

Due to a variety of concerns, growing demand as a last contractual arrangements, the full requirement arrangements, we find that if the demand here does go up as anticipated today, there's going to be a significant draw on natural gas at this point.

That is going to take gas away from California, even though we have the pipeline capacity available, we may not have the gas molecules to come down just because of the

quantity of gas that is going to get stuck here.

That is one of the reasons why we feel that the expansions have to be done so that this demand will be served and there still will be significant quantity of gas coming to California.

Let's go to the Havasu Crossover. Havasu Crossover is a line that connects the northern and El Paso southern systems here. We find that SoCalGas is being served significantly by gas that is produced in San Juan, comes down the El Paso north system, down Havasu, and then enters California.

We have talked about this significantly in a variety of reports earlier. I know your question, why is flow greater than the current capacity? That is because we have purposely let the model lose in terms of flows only on the Havasu Crossover. We have not purposely contained it because we really want to see how much of a tendency is there for San Juan Gas to flow south.

There is no rate even in the rate structure on the Havasu Crossover. That is the reason why we let this fill up. We find that there are two things that need to be done.

One is make sure that there is enough

expansion on these pipes to serve this market, and therefore, there is no constraint for California.

The second one is to make sure this capacity is increased, so that if gas has to flow from the northern system to the southern system, there should be significant capacity to do it.

Another reason why this probably will be beneficial is because of the growth, the significant growth, in the Rocky Mountain region. We will talk a little bit more about that, the pipelines in this region during the conclusion stage.

Shifting to Northern California, PG&E receiving capacity. They are about 170 MM a day or 179 MM a day over the last two years. That stands at around 3,400 looking at surplus, residential, commercial, industrial again. Fairly flat, there is not too much of a growth in the next ten years.

Power generation has got a nominal growth, it is not extremely high that is being served by PG&E, but there is a significant growth that you see out here. After 2007, 2008, the growth in the power generation is not very high.

PG&E also serves SoCalGas through two

points. One is directly from their Line 300, supplies can be taken down to Southern California. This pleases the flow presented by the Line 401.

It is not a physical flow, but more by displacement. There have been arrangements to make sure SoCalGas gets supplies where it is reflected off the 401 line.

Again with PG&E, we do show significant capacity which is available on an annual average basis, and like in Southern California, we are going to see a lot of fluctuations, a lot of volatility in monthly and daily flows.

Let's look at the Pacific Northwest Corridor, basically, focusing on the two California's, PG&E and GTN pipeline, coming from Canada. It is going to be supplemented by two other pipelines, one pipeline actually. It is the Northwest pipeline, which goes from Sumas and all the way to the Rockies. Stanfield is an interconnecting point for these lines.

Pacific Northwest corridor comes down and at this point you have the Tuscarora, which takes gas into the northern Nevada region where PG&E's backbone line comes into play here. Line 400 and the 401 bringing gas from Malin to Pacific

Gas and Electric's demand region.

What happens in capacities here. As I mentioned earlier, the PG&E and GTN, the gas pipeline, from the interstate pipeline from Canada's border to California's border went up by 179 MMcf per day and capacity inside California to bring it right down to the Bay Area/Antioch region has also been increased by 179 MM a day.

With that, we find that throughout this time period from 2003 to 2013, we do have enough capacity available on these pipelines. On an annual average we don't see any need right now to see an expansion. We will, of course, see fluctuations and tightness from time to time due to seasonal and daily impacts.

We find that it is fairly full up to the Stanfield point. That is where the gas can potentially go into other regions, or gas can actually come into the pipeline from the Rockies or from the (indiscernible) region.

This is at the California border at Malin, and this is inside line 400, 401 inside California.

Okay, looking at the Kern Corridor, gas from Kern or Rocky Mountains serving California.

The current capacity with the May 2003 expansion is significantly covering an inflow that we anticipated earlier in 2003. In 2008, 2013 time frame we find that we are going to be reaching that capacity and potentially requiring additional expansion on that line.

If this demand that is going to be served can be accommodated by other pipelines, then the other capacity we have could be sufficient over the forecast and horizon, so we have to wait and see how the flows on different pipelines will shape over the next few years.

Kern Corridor, of course, has indicated they can increase their current capacity somewhat through increase in compression.

So far, we saw a chart which showed really nice beautiful flat lines. Unfortunately, reality is not that way. You have a lot of changes. If you look at just monthly flows from December 2000 to June of 2003, you can see how the changes due to seasonal patterns.

We do find that in the last three years, the utilities were able to utilize the -- there was significant slack capacity available from time to time. We find that this will be the type of

situation that we will see over the next ten years.

Having done the basecase, you know that gas market does not listen to you much. It has a mind of its own, and there are a variety of factors which changes the market place, prices, flows, constraints, regulations, they all change from time to time.

The way we approach this uncertainty in the gas market is through scenarios.

With scenarios, we try to address a variety of outcomes. Some of them could be possible, some of them are possible, and maybe some are impossible, but we try to gauge the reaction that the market could have through some of these very broad based scenarios.

In these scenarios, we also try to integrate a combination of events to see what will happen if events happen in ways we do expect in a basecase, for instance. We will go through a lot of those assumptions right now.

Okay, I'm sure you have all seen this before. It was shown and don't attempt to read the slide. What are the different scenarios that we did on the natural gas side.

We start off with a basecase. Once that is done, we define, you know, which directions we want to go, we classify our scenarios as supply based scenarios, or demand site based scenarios.

On the supply side, the ones that we have done on this assumption, in this round, we did a low supply resources. Basically, we looked at the resources assumed in the base case. We have a lot of information available about how tight the market and how expensive it is going to pull out.

For example, a flow in British Columbia did not produce as much gas as they expected. These are the types of assumptions that go in here.

Another reason to assume a low basecase is, for example, the Rocky Mountains, there is a moratorium to drilling that is going to be affecting reduce the amount of resources that you can access. These are the assumptions which go in here.

We reduce the amount of natural gas resources that will be available over the next ten years, and then look at what the picture will be.

The next supply, of course, is the LNG

on the West Coast. We have addressed this in great detail this month. We will be talking about this later on.

On the demand side, there are really four significant ones. One is a dry hydro case. What happens if hydro conditions continue to persist to be on a dry basis. Normally we would want to look at this condition on some specific years, but what we did was assume that there would be a very tight hydro generation cases over the ten period, so that sort of gives us a very extreme dry hydro case.

We did a low and high economic growth rates, then a higher/lower PGC impacts or high and low DSM cases.

These are the three cases which have been sort of already integrated with the gas analysis, with the demand analysis and the electricity analysis office.

Finally the other demand scenario is to look at what happens if there was a very high use in the transportation sector. That is, gas is used as either LNG or as natural gas feed stock in fuel cells. We have assumed some very significant penetration of LNG in the transportation sector.

The levels we have assumed are about, you know, what would happen if we reached 5 percent or 10 percent of actual gas using California, which will be in the transportation sector. That is discussed in detail in the report. I will not be covering it in the presentation here.

Finally, what we do here is combine a variety of these factors, what will happen if one, (indiscernible) conditions are very strict, and as a consequence you find that the gas becomes a fuel of choice, and therefore, gas price increases.

Since gas is mandatory, is there enough already that goes into actually making it a competitive product, will it increase the prices on natural gas at wellhead price. These are the combination of assumptions that go in here.

What happens to field switching capabilities, for example, not only in California, but throughout the U.S. I want to make sure I mention the scenarios are done not just California, but the entire continent.

We capture the impact of a variety of factors, not only California but other places too. The description of the two scenarios, the

integrated outlooks which give us the high price boundary and the low price boundary are included in the report. I will not be showing that slide out here, it goes a little too big to be included.

I want to just go through some of the slides, not all, because the details are available and you can probably refer to them. Let's talk about that.

You have four cases, the high economic case, the low economic case, then we had the high DSM case, and the low DSM case. In sort of running all four cases, we decided to run two cases. One would represent the high econ or the low DSM case as you see here the gas demand increases.

This is the increase in gas demand in California in 2003 and 2008. In 2008 and 2013, we do not assume any change in 2003 as a result of these scenarios.

On the other hand, if you look at the low economic growth rate or the high DSM case, the natural gas demand in California is going to drop, and that is show by the blue bars down here for the same two years.

One of the observations that we did was

a change in overall demand in comparison to total demand in California was not very large in either of these cases. We also found that the impact on price in California was not too significant on an annual average basis.

This shows the extent to which prices change, it could be something like nine cents per MCF higher, or it could be anywhere from 15 to 25 cents lower.

As I said, this is not a major change on an annual average basis, but these are the conditions, especially the economic scenarios that really affect seasonal or short-term conditions. You will find probably these conditions can impact the gas market on a monthly or daily basis, although, we do not see the major impact on an annual average.

We have to address these conditions more from a short-term analysis perspective which we will be doing in the future.

The other scenario I want to talk about is the LNG. We have talked about potentially three LNG sources in California.

One of the most prolific discussions have been for LNG in Baja, Mexico. There have

been three cases that have been filed with the government of Mexico. One has yet to file.

We have, basically, at this point we have two cases that are still active. One is in LA and the other is off shore.

In Northern California we have one proposal for Humboldt, California proposed by Calpine. The other one that was in the news a long time ago is now out of the picture. That was by Bectel and Shell. That proposal has been withdrawn.

Basically, this slide shows how gas can flow if LNG just come here, Baja pipeline will be reversing its flow of direction. That is already in the works, they are in the process of going through an open season. It can come directly into San Diego region. Once the gas comes to Ehrenberg, it can flow in several directions.

It can go up the All American inside California up to where it is north, it can go directly into SoCalGas region, or it can flow east to satisfy the east of California customers.

SoCalGas, in Southern California, LNG can directly supply SoCalGas, and from there it can actually serve the other markets by

displacement.

Basically, we look at the actual locations in California, Humboldt, LA, and Tijuana. In the basecase, we have made the assumption that each of the facilities, I think the capacity would be around 1 Bcf a day of LNG supplies.

We have designed several scenarios. One is when you consider that all these three facilities are available. Basically, you are looking at three facilities in California. They are all going to compete in the marketplace.

The second one is we have looked at having just one LNG facility in Southern California.

Another scenario looks at just one facility in Baja, California.

There is one additional scenario. We ran -- we assumed the market will function in such a way that we will have at least two to two and a half bcf per day of LNG coming on the West Coast, the three facilities put together.

The only way that can happen is if global LNG prices are really low, and there is significant penetration for getting the gas into

California.

Maybe is it the subsidy on the tanker costs, maybe it is some other method by which we can certainly make it very economical.

To look at the flow of LNG in California, let's look at this forced LNG case. This is the one where we say there is going to be two to two and a half bcf when we run the model, it came about 2008 to 2013, we see around 1,600 to 1,700 MM cf per day of LNG.

To get such a flow into California, to insure this quantity of flow, we had to lower the LNG price from $1.80, the tanker cost, from $1.80 down to $1.10. That is the level of this concept that may be needed.

Now, we are focusing here on this is the competitive case. If you let LNG compete with the market price, you find that the penetration is not as heavy as in this case because now the price of LNG has to compete with the prices in the market place.

We find that 2008 the flow of around 400 MM a day that grows over time, 2013 flows of an increase of about 600 MM cf per day.

If you look at the Baja alone, all the

SoCalGas, Southern California LNG facility alone, you find that the penetration is significantly less because not only will we be accessing prime really one market.

You find that the Southern California facility proves to be more beneficial to California, there is more LNG because it goes directly into the marketplace. LNG on the Baja would have to compete with an additional transportation cost of the Baja pipeline to reach the markets.

I think the rest of the scenarios have been discussed in our reports. I will not go through them right here, but we will certainly take questions on it and report answers.

What are the study implications that we see from our analysis? Basically, we note that California will still have natural gas, but it is going to be at a higher price. It is just that the resources have not depleted, but it is going to cost a little more to get it.

We find that the pipeline capacity with recent activity that has gone on in terms of capacity is sufficient to insure supplies over the majority of the ten year time frame we are looking

at.

LNG provides the 4th supply source to California. We, initially before 1992, had only two sources, Canada and the Southwest. In 1993 the Kern River pipeline came on, and then we added Rocky Mountain as the third supply source. It was a very competitive addition to the resource mix.

You add LNG to California, it is a very competitive addition to the resource mix, and that is certainly going to be very beneficial.

Therefore, there have been proposals on storage, in fact, two private storage facilities have come into Northern California, that is the Wild Goose and the Lodi. There are plans on expansion storage facilities in Southern California.

I think these are, storage, especially from the short-term daily perspective is an essential component. The big condition here is that storage is useful to California if it is used by all the consumers.

In fact, we have already seen that viewing the crisis in 2000, when the critical customers did not have any gas in storage.

To continue with implications here, we

have looked at the charts on the pipeline corridors, Southwest, Pacific Northwest, and the Kern. The thing that comes to a point of discussion is that the capacity to the east of California customers, should be increased as we have seen in those slides earlier.

Capacity on Kern River probably 2008 and beyond is going to be certainly warranted. GTN looks adequate within assessment time period.

I want to come to close on my presentation saying that we've looked at the basecase and we have looked at scenarios. There is a lot of uncertainty in the market, and we need to address it. One of the ways is to look at risk analysis.

The other reason to look at risk analysis is because of the convergence of the natural gas and electricity marketplaces, how do they interact with each other, how close are they, and how will each one impact the other. These are additional analytical processes that we have to go through.

We need to certainly make sure we address short and long-term conditions. We certainly need to emphasize our analysis on the

short-term seasonal markets which we have not focused too much in the past.

LNG is certainly a critical topic. We need to certainly broach it in the right way, look at what the permitting rules are. We are in the process of discussing of how California should deal with LNG issues. We have had several meetings with state agencies and we will continue to pursue discussions in that direction.

How do we provide the incentive for an LNG market to come to California. That is the big question.

Finally, we will be addressing the role of storage in the supply and demand and price balance because that is a critical role of how is it going to be utilized and what changes are needed for better utilization of storage I think is one of the critical steps.

Now, for any burning questions.

(Laughing.)

Call me.

COMMISSIONER BOYD: If there is anybody that wants to ask a question or have a statement later, please come to the microphone, so everybody can hear you.

MR. PELOTE: Jairam, I believe you said that there are plans to expand natural gas storage capacity in Southern California. Could you expand on that as to what the plans are on that and who is proposing that.

MR. GOPAL: Basically, it is SoCalGas, they have made some changes. For example, in the Aliso Canyon and La Goleta, they are going to be expanding the amount of the capacity that will be available. That is, they will be taking some of their site buffer capacity and putting it as working capacity, working gas storage. That is going to increase the amount of gas that can be utilized by consumers.

MR. PELOTE: Are you referring to the 14 bcf expansion --

MR. GOPAL: 14, that's right.

MR. PELOTE: -- that has already been completed? All right, thank you.

COMMISSIONER BOYD: Can you tell us who you are for the record?

MR. PELOTE: My name is Roger Pelote with Williams Energy Company.

COMMISSIONER BOYD: Thank you.

MR. GOPAL: Commissioners, did our few

speakers who have expressed their desire to speak today, do they want to take it?

COMMISSIONER BOYD: That's fine. First, let's see if there are any other questions of you. Okay, come to the microphone and put your question to Jairam.

MR. GOPAL: Please make sure you state your name and affiliation, and speak into the microphone.

MR. HAWIGER: Thank you, Commissioners and Mr. Gopal, is that the correct pronunciation?

MR. GOPAL: That's fine.

MR. HAWIGER: Okay, thank you. My name is Marcel Hawiger. I am a staff attorney with the Utility Reform Network. My question is just regarding your last point, that you will be addressing the issue of storage and storage utilization.

I had some comments on that, that I wanted to make later. Am I to understand that was not included within the body of this report and will be addressed in a separate report or will just be added? I am a little confused about that.

MR. GOPAL: The report that has been put out strictly deals with long-term analysis. The

short-term analysis when we talk about storage, will be dealt with in terms of an issue paper at this point that will be published later on.

We certainly want to take a closer look at how capacity demand consumption will balance out in terms of pipeline capacity that's available plus storage that can be redrawn. That is going to be a separate paper.

MR. HAWIGER: Thank you.

COMMISSIONER BOYD: Is there going to be a forum to address that, Jairam?

MR. GOPAL: I've not contemplated on how it will be done, that's something we will have to think further about. The question is, do we want to have it completed before the IEPR or after?

MR. HAWIGER: If I may, I will go ahead and make some remarks because I think it is an issue that could be included within the long term planning, or anyway since this is the opportunity.

COMMISSIONER BOYD: Please, you might as well take this -- are there any other questions. There is?

MR. MUSSETTER: I may want to give a speech.

COMMISSIONER BOYD: All right. Sometime

late after lunch, Bob.

(Laughter.)

COMMISSIONER BOYD: Courtesy of former Commissioners. Go ahead and make your --

MR. HAWIGER: I have to get my notes, if you don't mind. Thank you very much. As I said, I represent the Utility Reform Network, which is a non-profit organization representing the interests of residential and commercial consumers in California.

I should preface my remarks by saying I was not aware there would be another report, so I had some comments primarily regard the issue of storage that I gather may be addressed at a later point.

Anyway I appreciate this opportunity very much. I don't get to come to the Energy Commission too often, and I appreciate being able to offer some comments on this report which I found extremely useful and extremely well written in terms of its presentation of the facts.

Really what I wanted to focus on is that, I believe, in the section towards the end concerning policy issues and infrastructure questions, I thought on page 70, that the first

question presented was an extremely important question.

Should this state support a greater level of in-state natural gas capacity and use it as a more cost effective means that additional pipelines to insure supply reliability and managed price volatility.

I think that is a key question, especially from our point of view as representatives of consumers whether we can manage the system in a more cost effective manner to both provide reliability of electric service and better utilization of the gas system.

Unfortunately, I found in this report, basically, no data that would allow policy evaluation of that question. I think that even if there is another report, it would be worthwhile to have at least a minimal amount of data concerning the existing storage capacities and storage utilization to assist in policy evaluation.

In the section on natural gas infrastructure assessment, pages 36 and continuing through infrastructure within California, page 41, there is literally no mention of storage except for at the bottom of page 41, a description of the

expansion by SoCalGas of their two storage fields and the capacities of the two private storage fields owned by Wild Goose and Lodi storage.

I would recommend at a minimum there be a table providing both the existing storage field inventories of all the storage fields as well as the withdrawal capabilities because I think as Mr. Gopal's slide showed, the question that is important is what is the deliverability of the system.

That depends both on the pipeline capacities as well as the withdrawal capacities from storage. I think it would be useful for policy makers to have this data.

Secondly, I also think it would be useful to have data on actual storage, historical storage use in the same way that there is date on throughput. There could be data on actual storage inventories with time because from an eventual policy perspective, and I guess I am not quite sure how this report will tie in to the requirements of SP1389 to also offer some, I think, a policy analysis, if I'm not mistaken. I don't remember the exact language in the legislation, but I believe it talked about having

a policy report also.

From our perspective, we believe that the -- it also in SB1389 talked about coordination among agencies and using this process to promote coordination. From our perspective, it is critical for the state to look at the question of whether there should be policies to rebundle storage, to create some sort of strategic storage reserve, or other some other mechanism regulatory mechanism to more cost effectively utilize storage because this report is great in focusing on the affect of various market conditions on supply, demand, and price.

When it comes to storage, we saw very clearly in 2000 and 2001 that market conditions, at times, act in a negative way as far as the utilization of storage because customers did not put gas into storage in summer of 2000 due to price expectations.

Regulatory policies can and should have an influence on utilization of storage and utilization of the system. That would be my, at least, hope that at a minimum there would be some additional data provided in this report that would allow policy makers to address those questions.

CHAIRPERSON KEESE: I would just -- I know we have the data because I see it.

MR. MAUL: If I may, David Maul, Manager of Natural Gas and Special Projects here at the Commission. We agree with the point you are making about the importance of natural gas storage here in California.

The key difference why it is not presented in this particular report, is because this report is a long-term assessment looking at annual issues for the long-term.

Storage really is an issue that is a short-term issue helping to balance out the system and meet peak daily or peak seasonal issues. We have data on storage, in fact we have a tremendous amount of data on storage, historical usage, and the capability which we can present later on.

Currently, right now, we are proposing to do an additional study on additional study on short-term market conditions because we believe the role of storage facilities in California has fundamentally changed from how it has historically been used as to how it might be used in the future.

Our finding is that we think an

additional analysis of the role of storage to mitigate price spikes on a short-term basis and whether there is a value for increasing the amount of physical storage in California, and how that storage is used in California would be warranted by a collaborative effort by ourselves, the PUC, and the utilities, and interactive study.

We are proposing to do that study. It will be a public study, and we will be happy to hold a public workshop on that and solicit input to come to that conclusion.

MR. HAWIGER: I appreciate those comments. I just want to say that one of the reasons why I am worried about this is even though -- because I have seen a disturbing pattern, that even though you say it is an issue of concern, when I looked at the December 2002 report on natural gas supply and infrastructure assessment in the section concerning natural gas infrastructure, it was discussed pipeline capacity. There was zero mention of storage at all.

In the follow up February 11, 2003 report on electricity and natural gas infrastructure assumptions, there was a short

section on natural gas storage facilities, which likewise did not provide the data on existing storage capacities or withdraw capacities.

I think you are absolutely right, there has been a change in storage, but I think that is something that would be extremely useful for the legislature and policy makers to know that prior to around '92, storage played a key reliability function for electricity and production.

Now at a time ten years later when we are much more reliant on natural gas for electricity generation, that reliability function has been severed by various regulatory changes, and I think that is a key issue that any legislator should at the minimum understand.

MR. MAUL: Good points. Thank you very much.

MR. HAWIGER: I had some very specific little factual issues about four pages and I don't know if this is the time to mention them, or if I should just follow up with staff on that.

CHAIRPERSON KEESE: Staff would seem to be right.

MR. HAWIGER: Thank you very much. I appreciate your time.

COMMISSIONER BOYD: I tend to agree with you it is going to be tough on the policy folks like this committee to deal with this ball of snakes unless we gather all the snakes together at one time, so very valid point about storage.

More questions or statements, just raise your hand and come on down. Jairam or Al can help you out there.

DR. FERGUSON: My name is Rich Ferguson. I am the Research Director for the Center for Energy Efficiency and Renewable Technologies here in Sacramento. For those of you that have been to these workshops, you have heard me before.

I guess my overall comment on the report is that it is hard to know how you get to where you are going to get if you don't know where you have been. I'm not convinced that this report gives a very convincing explanation of where we have been and where we are now as a matter of fact, nor did Mr. Greenspan's discussion yesterday enlighten me.

I have here, I hope you can see it as it is, these are date from the EIA, and what I am going to do is take a poll and see who believes these numbers. The top graph is the EIA

consumption data, this is from the March 2003 Natural Gas Monthly Report.

As you can see, consumption was fairly flat through 2000, there was a little spike in 2000. Since then, it has dropped about 7 percent. We are down about 2 trillion cubic feet per year. I haven't seen the data for this year, the EIA runs about four months behind.

My guess is that this reported cold wave that ran up or ran down storage this year isn't going to be reflected in this kind of data. If you look at the gas weighted heated degree days for this year, a national average this was 2 percent warmer than the average year on a seasonal basis.

Everybody has picked up on that including my colleague here, but I'm not convinced by the time you look at it on an annual basis that it is going to make -- an expectation is that consumption this year will be flat or down from last year because of the economic situation. It depends on what happens this summer with heat and so on.

The second sort of flat line in there is the EIA reported production numbers. When I

looked at those two graphs, I see a disconnect.

According to the EIA in 2002, we only needed about a trillion and two cubic feet of imports based on our domestic production. In fact, we had about 3.5 trillion cubic feet of imports plus we drew about .4 trillion cubic feet gas out of storage last year.

My question is what happened to all that gas? If we are really producing that much and we are only consuming that much and we are importing what the import numbers are, where is the disconnect? Those two graphs don't add up.

What I did was take the consumption numbers, if you believe the consumption numbers, subtract off imports, subtract off pulls out of storage, and get what has to be the actual domestic production if you believe the consumption numbers. That is the bottom line.

As you can see, according to this, what I call the implied production, which is what you get with consumption minus imports, minus draws on the storage and some miscellaneous.

Production, domestic production in lower 48 has been falling rather dramatically almost 3 trillion cubic feet a year over the last five or

six years.

This is all EIA data. Now, EIA understands that the numbers should really add up, and so what do they do, they have in their report a fudge factor that they call a balancing item which they basically subtract off the production numbers to make production plus imports plus draws on storage equal to consumption.

Historically, that was a pretty small number that came from data accuracy issues and pipeline packing and things like that. Back in '96, '97, and '98, this implied production was pretty close to what they recorded as production.

However, in the last four years, that fudge factor, that so called balancing item in the monthly reports has grown until last year it was 2.75 trillion cubic feet were about 15 percent of storage.

I don't know if that bothers the EIA or not, but it sure bothers me, and I haven't been able to get an answer out of EIA about what the official excuse of this size of this balancing item is.

The question put to you all today is which of those lines is closer to the truth? How

many think that the consumption data is probably pretty good and pretty reflective of what has been going on in the last six years? Hands? Nobody? We don't believe the U.S. Government?

(Laughter.)

How about the production data? By the way, the EIA collects this data from the states, they don't go out and get it themselves. The states send in the production number. Do we really think the domestic production, lower 48, has been pretty flat?

I don't. Do we believe that this implied the lower curve, the so called implied one, is probably closer to the truth, and in fact, the consumption data and the import data and draws on storage data is probably more reliable than what is reported to EIA from the states.

That is my personal opinion, but it strikes me that the answer to that question is crucial to this report.

If, in fact, you know, production has dropped in the lower 48 by almost 3 trillion cubic feet over the last half dozen years or so, that has serious implications. You should note that the biggest drops on that bottom line occur with

very high prices.

High prices in which the equilibrium model that the Commission is running here would have predicted all kinds of gas coming on line, so it didn't.

I just think we need an answer to this question about -- because the assumption is that the equilibrium model, when you run that thing, it puts gas in the system. The only unknown is what the cost of that marginal production is, and that sets the marginal price and outcome the prices.

If you look at those wiggly curves that you get from the Henry Hub Ford futures contracts prices, and you average them over the next 24 months or even 12 months, you have prices over $6.

The equilibrium model is going to tell you a flood of gas is going to come onto the market, and we will see what happens this year. As you know, the EIA runs four months behind, so we don't know what the production data looks like yet. We will see, maybe there will be a big spike.

Notice that the spike in prices in 2001 didn't do a heck of a lot to increase production then either, it sort of held it flat. This is my

basic problem with the report, I mean, this is what is going on in, you know, in real terms in the gas markets today that have got us to the kinds of prices we are seeing to the fear that there is not going to be enough storage anywhere in the country to get the country through the year.

We just saw last week a report came out of Alberta saying that their production was going to be done next year, there is a new pipe under construction to Mexico to take North America gas into Mexico, and that is my problem with the report. Things have changed, and it is not business as usual any more, and we need to understand where we are and where we are going.

For the life of me, I don't understand how all the media talk, that the problem is because all consumption is growing. It hasn't been growing. It may grow a little bit this year, but not a hell of a lot.

The problem is on the supply side, and that is something we have to understand why that is, you know, why the equilibrium production cost models don't work, and you know, what we are liable to see in the future.

I haven't got detailed comments like Marcel did, but to my mind, this graph and understanding this graph is the burning question that we all need to answer.

I would love it if Mr. Keese would call up the Secretary of Energy and ask about this graph and say what is your excuse for why the implied production numbers are so different from the report production numbers and which of those represent the real production, he best estimate of the real production in the U.S.

I haven't seen a good answer, and so far, everybody is ducking the supply issue and blaming the demand side. I just don't think that is where it is at.

Those are my comments.

CHAIRPERSON KEESE: Thank you, I'm sure Jairam will give us an explanation.

DR. FERGUSON: Questions about the graph or where they got the data or anything like that.

CHAIRPERSON KEESE: I'm sure Jairam will give us an explanation.

(Laughter.)

MR. MAUL: Well, I could, I would like to respond to Mr. Ferguson's comment there. We

actually agree wholeheartedly with his comment. The simple point of his comment is that the data quality for the national U.S. production supply data is questionable.

We file comments with FERC, as you know Commissioners, last fall one of our key points is that the information on natural gas demand and supply issued or data is questionable. It is not very timely, and there are problems with the quality of the data that even comes out of US EIA, and we would like FERC or others in the federal government to resolve this particular issue.

As Mr. Ferguson pointed out, this is a national problem. California is affected by this problem, and the only possible way that we can find out of this situation is to separate California from the national markets which will take a herculean effort to try to do that physically.

We are stuck very tightly to the national markets on prices, and even on supplies and so. We have to try to find ways to what we can do in California to mitigate this issue which is a national problem. There are some actions which can be taken to try to mitigate that action,

and we will be discussing that later.

CHAIRPERSON KEESE: I will say that at a LNG conference that I spoke at about two months ago, there was a presentation by EIA that caused some of the -- that resulted in the same response we just heard, and there was a universal questioning of EIA's numbers by the subsequent speakers, everyone of which challenged them.

The EIA response was that it seemed to be a valid concern, and they would go back and check their numbers. I have not seen anything since.

MR. MUSSETTER: I'm Bob Mussetter, and I am the managing member of a small LLC called ENERLAND, LLC. We have the site that Reliant abandoned one year ago or so.

There are a number of sayings that have been advanced in this forum from time to time. Dale Nesbit's, "pipe is cheaper than gas" comes to mind, but mine is, "Luck is better than brains".

Our little company didn't know when we executed the master lease on this 4,800 acres that there was a possibility that the Ruby pipeline might terminate right there inside our ranch, but that is just what is happening.

In fact, just for your information, staff and others, the western terminus of Ruby is under construction right now while we are sitting here. The pipe is being laid. Of course, it is being laid by Wild Goose, but nevertheless, that's where Ruby intends to terminate, which will give Ruby an advantage over any other interstate pipeline because it will end right into the underground storage, and then the connector line, which is under construction now.

The PDE Redwood Path backbone line comes over from the underground storage and the Butte Sink to our site, which is right on the Redwood Path, lines 400 and 401.

It just seems to us keep it simple. Ruby is the easy and cheap next step to assure California of competitive gas supplies. Obviously, power cost is a direct function, especially in a $6 gas market of the gas price.

I would say after Mr. Greenspan's and others comments including Pat Wood remarks, today in the United States it is patriotic to support new pipelines and would probably it would be subversive to oppose them.

I would suggest the following, that this

is in line with the Goldman-Sachs smart young man's presentation yesterday before the House Energy Committee that pipelines are a low rate of return investments, and that is one reason we always seem to be kind of running behind and don't have a surplus.

I would just point out to this Commission that it would seem unnatural for this state, which has gotten itself black eyes and bloody noses here in the last two or three years with its remarks and conduct, this state could go a long way in cleaning up its image by offering to finance a portion of Ruby.

I would say it would be sensible if California would finance the portion that will bring it from Reno to here, probably a couple hundred million, maybe $250 MM, something in that order. That is well within the bonding authority that sits across the street unused.

It could be set up so that it would provide a take or pay return, I think. The state of Wyoming, of course, is doing more than its part, it's authorized the issuance of a billion dollars in bonds, which for Wyoming is a big amount.

They haven't -- they just hired a man to run their pipeline authority, their government agency, their state agency, and they haven't developed their policies as to how that funding is going to be provided. That will be coming along rather rapidly, I think, the rest of this year, probably late in the summer and through the fall. Pretty soon, we are going to know how Wyoming intends to do that.

It would seem to me to be a wonderful thing if California would join hands with Wyoming and finance Ruby because then you would have the advantage of public funding and financing at the lowest possible cost.

El Paso has -- he tells me this week and last week, that they have it to Elko at 20 inch diameter. Well, of course, we want to see larger pipe than that, probably 30 to 36 inch diameter, but at least getting it to Elko, that far, you begin to know what his costs are.

He has got three large companies signed up at Elko, the Barick Goldmining, the Newmont Mining, and then Florida Power and Light apparently is contract with those two companies to build them a power plant there in association with

their gold mine.

They have signed now with Ruby, which brings it that far. The next thing Ed Miller intends to do is to get it the next 150 miles down to Reno and you can just figure these a million dollars a mile, you are probably not going to be too far wrong.

That is what is really going on here. I'm having my telephone calls answered by some pretty heavy duty people who shall for the moment remain nameless, but who are active in this state and understand what is going on.

I think in the electricity and gas spheres, and they are looking very hard at our site and also at Ruby as the next logical, viable step in addressing this shortage which everyone acknowledges and sees in one form or another.

It looks to me as though we are in for a short-term power market for probably something in the order of the next five years because of the bankruptcy case and the uncertainty that's engendered there and the other litigation that is under way.

I don't think PG&E is going to withdraw from the bankruptcy even if they are restored to

some semblance of solvency because I think they feel they have a good shot at getting out from under the PUC with a good portion of their assets, and that is an important goal for them. I don't think they are just going to leave voluntarily. They were the moving party in the bankruptcy, so presumably they can stay there if they want to.

The other big factor, I think, that's not yet quantified properly is the Brownfield, the fate of the Brownfield plants, the old electricity plants that were basically sold or divested is the word that was used.

I've been working and thinking about this and working on it a long time, and another person from back east actually just put it in perspective for me just the other day. He said, "Behind every DWR contract, is one of those old plants."

If that is the case, if the contract is dependent on the functioning of those old plants and so we have Debolt, DWR contracts, and the Brownfield capacity intertwined, intermingled, and co-mingled.

I think California is in a more precarious spot electrically than is generally

being conceited or admitted, so I think that work needs to go rapidly on that to figure out which of these plants are likely to fall off the truck right away.

They face two huge problems, the price of gas itself with the high heat rate. It is hard to see how they can compete or how they can operate without losing money, and then of course, the emission control problem with deadlines coming along administered by air districts that don't really have as their primary mission an adequate supply of energy.

There are some other little things that have come along that you no doubt most of you know, but I will mention them anyway in case somebody has missed it.

I didn't realize that PGT, the Washington and Oregon end of the Redwood Path, the big inter-tie from Canada, a gas line, is contained within NEG, which is the merchant's subsidiary of PG&E which is apparently going into bankruptcy soon.

I was talking with an executive from Trans Canada up in Calgary, and he made no bones about it, he said if that pipeline comes up for

sale, we're still going to be interested in buying it and you remember they tried to buy it ten or twelve years ago.

That jump of pipe could change hands which would bring Trans Canada right down to Malin right to the edge of California, and it might change their outlook. They are not only in pipelines and gas exploration and production, but they are also in power generation and would expect to continue in that.

They are a little different than in Canada, which doesn't want anything to do with power generation even though they have huge gas reserves in the Rockies and in Canada.

I thought I would close with a little verse that subject was touched on by Jairam earlier. "A planner is a cautious chap, with neither sword nor pistol, he moves about most carefully because his balls are crystal."

(Laughter.)

COMMISSIONER BOYD: Anything to say Jairam?

(Laughter.)

MR. GOPAL: I think the Commission regarded all the planning a long time ago, we only

do forecasting.

COMMISSIONER BOYD: Thank you.

MR. GOPAL: Commissioners, we have two presentations, two comments, and I see a third hand for comments, so you need to go ahead with maybe the presentation now.

I would like to call up Kirk Morgan, Kern River.

MR. MORGAN: Thanks, Jairam, and thank you Chairman Keese and Commissioner Boyd for allowing Kern River to come in and share its views on the California market and particularly on infrastructure assessment.

As you know, we just completed what is the largest natural gas line pipeline project in the country. We have expanded the Kern River pipeline by over 900 MMc/d into California. That was completed on May 1. We added about 717 miles of 36 and 42 inch diameter loop pipeline, 164,000 horsepower of compression at a cost of about $1.2 billion.

What I wanted to talk about first is the impact that expansion is having on California. We've only had a little over a month of operating experience with that, but I wanted to share that

with you and also talk about some of the issues that raises for California.

First, the total capacity of Kern River is now 1.73Bcf/d. We more than doubled the size of Kern River, and again, it was placed in service on May 1.

I had a lot of questions in the months leading up to us going in-service about how full do you think it will be, will it be on time, things of that nature, and I just want to say that 97 percent of that capacity is contracted to California delivery points. On the very first day that we went in-service, it was 95 percent full.

We did come out very strong. We didn't even expect it to be that strong, but as the month progressed, we have operated at over 100 percent of its capacity, and the average for the month is 99% of capacity. It is a very strong signal that Rocky Mountain gas is desired by California end users.

Our peak day has already been over 100 million a day above its design capacity. Our peak day was in May, 1.863 Bcf/d and really it is into a soft market. The power generation load, which we have connected as a substantial amount of, has

not really come on strong.

On average, we are now delivering 950 million, almost a billion a day to the California utilities, SoCalGas and PG&E and that compares to only 363 million a day in April.

It is almost a three-fold increase in our deliveries to the California LDC's going from what was about 7 percent to 19 percent of that capacity.

I'd also say that out of all that delivery, the 950 million a day, in aggregate, there is zero that is contracted to these utilities. This is primarily serving the non-core market. A situation, incidentally we'd like to change as time goes forward.

There has been a lot of changes in the market. The reason Kern River was built, there was a wide differential between the supply prices in Wyoming and the California Border prices. That differential was two or three dollars at times, but just looking at April of this year, it was a $1.64 average. That is the price signal that is sent by the market to tells you additional capacity is necessary.

When that capacity came on, that basis

differential narrowed immediately to an average in May of $0.69, just about enough to cover the transportation and fuel charges for Kern River.

Supply prices which had been depressed in the Rocky Mountains immediately increased, and on average they increased it by $1.36 per Dth at the Opal supply point.

Nonetheless, higher prices are not necessarily good, but that Rocky gas is still the most attractively priced into California. We expect it, and I believe your report expects it to remain attractively priced relative to other supply bases.

What's happened on other pipes, like I said the market has been weak, and the current capacity or the Rocky supply has displaced capacity coming from other regions.

From Canada, they have been reduced by about 400 million a day, from the Southwest supply basins, they have been reduced by about 200 million a day. That is a significant change in where supply is coming from.

What's also happened is capacity that wants to go to California isn't getting in. We are curtailing 81 million a day at California city

gates and that gas is being forced into other markets. That then drives an issue I want to talk about, slack capacity.

Before I do that, though, Kern has been market responsive. We have invested $1.4 billion in the last three years. We have had three main line expansions, one in July of 2001 by 135 million a day, and another one in 2002 which had the effect of lowering rates to all our shippers.

We have added new delivery points, the high desert lateral is 282 million a day with a connection to PG&E of a similar amount 282 million a day.

We had a delivery point to SoCal of 500 million a day at Kramer Junction, and that temporarily relieved the constraints that we saw in 2001 at Wheeler Ridge, when there was six trillion cubic feet nominated at that point.

We didn't see any constraints on SoCal for a period of a couple of years following the addition of Kramer Junction. Most recently here, we have completed our large expansion, the 2003 expansion project.

From the date we held the open season to the date we placed it in service was just over two

years. We completed the open season in March of 2001, and put the project in service May 1. We got remarkable cooperation, incidentally, from the state agencies and from FERC. We are very pleased with that.

The investment is $1.2 billion. We are direct connected now to something over 6,000 MW of new electric generation which has either just been placed in service recently or is currently under construction.

We serve a lot more power generation through interconnects with SoCal and PG&E. That investment of the new generation is something around $3.5 billion dollars, so you can see how the current corridor from the Rocky Mountains has been the source of a lot of investment.

We secured our financing on May 1, the day we went in service, the permanent financing. Up until then, we had a construction loan, it was $836M, and it was an "A" rated debt issuance by Standard and Poors and Moodys which ended up being priced at just under 4.9 percent.

For an industry that is in as much chaos as the energy industry, that is a remarkable debt issuance rate, and it wasn't because our shippers

are so strong. Most of our shippers are having financial difficulties as well.

The reason for that attractive financing, and it is non-recourse project financing, is because the strong fundamentals of bringing Rocky Mountain gas into California.

We passed that savings on to our customers also on May 1 and reduced their rates by 11.4 percent or $0.65 per Dth, so we currently have some happy shippers.

Getting to the report and the implications of Kern's expansion. The production outlook for Rocky Mountain gas is the strongest in the western United States or western North American. It grows by 63 percent compared to other southwest basin that show decline over that ten year period of 7 percent.

The pricing forecast is similar. Rocky Mountain gas is expected, not just by your report, but by other forecasters, is expected to continue to have a $.50 to $.60 price advantage over Permian supplies that California has historically relied upon.

In our view, supporting additional infrastructure into the Permian or increasing

reliance on that supply basin is misguided.

The recent regulatory directives ordering utilities to subscribe to El Paso capacity, for instance, in lieu of seeking more competitive alternatives was a poor decision in our view and markets should be allowed to function.

Kern River can be expanded again, it can be expanded by a lot, but by just closing some loops and adding compression we can expand by as much as another .5Bcf/d.

On the infrastructure issues, there has been a lot of talk about slack capacity, and I guess our view is that there's plenty of slack capacity for reliability, and particularly the SoCal and PG&E systems have been very reliable, but its insufficient capacity for gas on gas competition.

The markets have fundamentally changed. The SoCal system, for instance, was constructed to rely on supply from the San Juan and Permian basins. That is not where the most attractive supply comes from any more, and the lack of slack capacity is actually restricting gas on gas competition.

It happens every day on Kern River that gas from the Rocky Mountains is cut in favor of gas flowing in from the Permian or San Juan basins.

As someone mentioned, pipe is cheap and gas is expensive. That is true, the transportation costs represent less than 10 percent of the total delivered gas cost. What we have seen is relatively minor imbalances in supply and demand and cause a disproportionate volatility in pricing.

In Kern River's view, slack capacity should be increased, not only to provide more gas on gas competition, but to increase the flexibility for storage injections.

What's happened with the new gas fire generation, it has created a summer peak. That summer peak, that increased demand for summer peak limits the window that is available for storage injections. An additional slack capacity would help eliminate that.

There is also an important project. It is -- I don't usually promote a competitors pipeline, but El Paso's All American line, the California piece, they call it 1903, is a critical

piece of infrastructure. It would act as a hub pipeline connecting Rocky Mountain gas, San Juan, and Permian basin gas and allow it to get to whatever receipt points on the SoCal system it needs to get to.

We would certainly be supportive of that. It would allow Rockies gas to compete, not just in California, but in Arizona and in Mexico as well by providing an interconnect between Kern River and Ehrenberg.

The other infrastructure issue is really with regard to expansions of the Baja Path. Kern River parallels PG&E's Baja line for a lengthy distance and by just taking deliveries of high pressure gas off of Kern in the Wheeler Ridge area, the expansions of the Baja Path can save something like 250 miles of potential looping and compression, and we think the Commission should consider that as an alternative to expanded the full Baja Path. That has the additional impact of providing supply diversity to the utilities.

With regard to market structure, it is important that the interstate and intrastate grids function efficiently. They are not doing that now, the capacity allocation system on SoCal is

not efficient, it restricts gas on gas competition, and it prevents users behind the city gates from having the certainty of contracting from the wellhead to the burner tip.

The gas industry restructuring that was proposed a few years ago now, and there was a settlement agreement on it, was never implemented, but the unbundling of the backbone system on SoCal we feel is critical to the market's operating efficiently.

Not only that, it would send the appropriate price signals when capacity expansions are necessary. As I mentioned earlier, there are those price signals that are evident today, if one looks close enough.

The GIR also provides storage hub services so that SoCal's vast storage resources can be used for electric generation that has now moved off its system. Right now the SoCal storage is constrained to just on system markets, and we would like to see that moved to off system markets.

That concludes my remarks. I would be happy to answer any questions.

(No response.)

MR. MORGAN: All right. Thank you very much.

CHAIRPERSON KEESE: Thank you. Thank you for bringing some policy issues before this body.

MR. PEDERSEN: Norm Pedersen representing SoCal Co-Generation Council. Thank you, Jairam, and thank you Chairman Keese and Commissioner Boyd for giving Southern California Generation Coalition an opportunity to present some brief remarks today.

I'd like to start out by thanking you. Yesterday was a big day in Southern California, as the headline from today's LA Times, which you may not be able to see from there shows yesterday we had a ground breaking on a very important new 250 MW plant, the Magnolia plant that will be located in Burbank.

This plant isn't going to be out in the desert, it's not going to be down in Mexico, it's not going to be downstream of some or south of some congestion point, it is going to be right in the heart of the load center in Southern California.

We believe it is a very important plant,

and we thank you for everything that you Commissioners and everything that this Commission did to make that plant possible.

That plant was also made possible by some policy decisions that were reached in California a number of years ago, over a decade ago. I would like to discuss a couple of those policy decisions and discuss the ramifications for some policy decisions that are being made today.

The first policy decision was to permit non-core customers, the large end users in California to buy gas on their own. The result of that key decision, which was reached actually by the CPEC back in the late '80's and early '90's, that resulted in the development of a vibrant non-core, a vibrant, competitive, non-core market for natural gas in California.

In 1990, Southern California Gas Company was told you can't sell anymore to the non-core customers. That meant that the non-core customers were on their own. The market responded, third party suppliers came in. Very quickly we saw the development of new products that addressed the needs of non-core customers.

Some of the non-core customers acquired

interstate pipeline capacity and went to the basins, others purchased at the city gate. For example, at Topok, we saw a multiplicity of products being offered to non-core customers as a result of having many non-core customers participating with many sellers of natural gas. We had open competition, and importantly, we had price constraint.

Coming to today, we urge this Commission to continue to recognize the importance of maintaining the open competitive liquid freely functioning non-core market for natural gas.

We are very concerned when we hear proposals about, for example, getting the utilities back in the business of buying gas for non-core customers and, for example, putting it in storage as though non-core customers are unable to make those decisions on their own.

The key to having the competitive market that we have had, the efficient market that we have had over the last ten or more years in California, has been permitting non-core customers or their agents make decisions based on their economic judgements.

We urge this Commission to recognize the

importance of that policy decision that was made back ten years ago and the importance of resisting policy decisions that may cut against the viability of the non-core gas market.

A second decision that was made more than ten years ago, that was a right decision and was a policy success, was to unbundle interstate pipeline capacity from the rates of non-core customers and allow non-core customers to go out to acquire their own capacity.

That gave non-core customers the ability to contract for capacity upstream or if they desired, to contract with third party suppliers that in turn held contract, held interstate pipeline capacity.

The result of that decision was that the non-core market has been able to send signals upstream to the interstate pipeline community as to when they needed capacity.

You just heard from Kirk Morgan wherever he went -- you just heard from Kirk about how all of the capacity on the Kern River pipeline is dedicated to non-utility customers. Some members of SCDC are holders of Kern River, previous Kern River capacity and new expansion capacity. Los

Angeles Department of Water and Power is one of them.

We are concerned about policy decisions that we see being made that erode the viability and the vibrancy of the decision that was made, again, more than ten years ago to the non-core customers to determine their future with regard to upstream capacity.

We recently had the California Public Utilities Commission require Southern California Gas Company to acquire 139 MMcf/d of additional El Paso capacity. That was not capacity that SoCalGas needed. They already had 406 MM in excess of their core requirements.

There already were stranded costs, which were billed to non-core customers through what the PUC calls interstate transition costs surcharge, the ITCS. Non-core customers are already burdened with standard costs.

Now it appears we have another stranded cost coming our way. This is an intrusion on the non-core customer market freely functioning to make decisions about the upstream capacity that it needs and doesn't need.

We believe that if it were left to non-

core customers, they would probably have made a different decision to acquire that 139.

In short, and in sum, we have some major policy successes. The decision to allow a non-core customer to acquire their own supplies. By the way the core/non-core distinction has been so successful that just up the street over in the capitol building, they are talking about adopting that distinction on the electric side.

We have had the key successful decision to allow non-core customers to decide on their own capacity requirements upstream in California on the interstate pipeline market.

We urge this Commission to recognize those key policy successes that California has had in the report and to recognize the implications of those key policy successes for yet further policy decisions that you may have to make and that California may have to make today.

Thank you very much. We very much appreciated this opportunity to appear today.

COMMISSIONER BOYD: Thank you for your input.

MR. GOPAL: We next have Eric Eisenman from PG&E GTN.

MR. EISENMAN: Good morning, Commissioners, my name is Eric Eisenman, and I am actually representing two pieces of pipe on both ends of the state, PG&E Gas Transmission Northwest and North Baja Pipeline.

First with respect to PG&E Gas Transmission Northwest, which I will now call GTN, for short. Mr. Gopal stated that he did not see a need for an expansion for that during the ten year planning horizon. Maybe he is right, maybe he is not.

I think the key variable there is what happens with potential production in the McKenzie Delta in Northern Canada. We expect a pipe of about a DCF and a half to be built there at some point. It could be as soon as 2008.

If it does happen in 2008, 2009, we believe that there will be some expansion of the GTN system before 2013.

When looking at the long term as far as supply coming from the north, the scenario should also at least consider Alaska gas. We think at some point in time, there will be pipelines built that could transport over BCF of Alaskan gas south.

The question is, when will that happen. We just don't know that, but it will likely happen in our lifetime. When it does, it will clearly change the dynamics of the West Coast energy markets.

Mr. Gopal mentioned that North Baja and its partner, Gasoducto Bajanorte are having an open season right now for LNG developers to move gas from Northern Baja into California and other markets in the Southwest.

That open season will now conclude at the end of next month. From that point, we will then go to binding precedent agreements, and our current forecast is that gas will start flowing from at least one terminal within four years.

We do recommend that the state support the development and construction of LNG regasification terminals generically, whether it be here in California or in Northern Mexico.

Mr. Gopal described an alternative scenario that included LNG. I think fairly soon that might become the base scenario. I think we are very very optimistic that at least one LNG terminal will be built here in the West within the next four years.

North Baja right now is it flows gas east to west serving generation in Northern Mexico. If and when a LNG terminal is built, the pipe will be turned around and gas will flow west to east and deliver gas into the SoCalGas system or back into the El Paso system.

The sources of these supplies are many and includes Alaska, Russia, Indonesia, and Malaysia, Australia, Bolivia, and Peru. Our ballpark estimate, there is something like 325 tcf of stranded gas reserves in the Pacific Basin alone, and I think that's a resource or resources that we want to take a close look at.

The assessment asked a couple of questions about slack capacity. Should the state require a higher level of border pipeline slack capacity as a more cost effective means to insure supply reliability and manage the price differences. Should the state request FERC to require a higher level of interstate pipeline capacity along the pipeline corridors?

It is the word "require" that I have a real problem with. I don't -- regulators or government entities requiring something like that tends to lead to problems. I think Mr. Pedersen

described one issue that his clients have had to deal with over the last year.

I think a better way of looking at it is the utilities and generators, the major users of gas, can manage their cost by holding firm capacity all the way from their market, or from their generating facility back to the supply.

That is what Mr. Pedersen's clients have done, they've been able to manage their costs that way. You have these liquid markets in the supply basins, let them work.

It has worked, we have seen a lot of infrastructure built here in recent years. The current river lines we have had three expansions in the last ten years, we have seen two new storage facilities added.

It doesn't seem like a great idea to have that kind of government intervention. I would also note that if the state did request FERC to require a higher level, I doubt if FERC, or at least this FERC, would entertain thoughts like that.

Now, if FERC were to require a higher level, we would -- for us to expand our system to give you that kind of comfort, we would require

long-term contracts with someone in a credit-worthy entity, and we would just need that to finance it and for our management to be willing to move forward with that.

There is also the issue, and this gets back to what Mr. Pedersen was saying, is how do you allocate the cost of something like that. It would not be a free lunch, and if the state decides to pursue something like this, there is a lot of detail that you would have to think about first.

There was a question asked as to whether the permitting process is affected to get needed facilities. I would say it is pretty good, it could probably stand some room for improvement. At FERC you have, for interstate pipelines, you have two possible processes. One is an environmental assessment that typically takes about nine months, it is typically for much smaller projects, and an environmental statement, which typically takes a year to a year and a half.

We have experienced the most problems is when there is a joint EIS/EIR, where there is a state agency in charge and a federal agency in charge, and they both think they are in charge,

and they both can't be in charge.

We have had in a couple of instances work at managing that, and we hope that in the future the agencies will be a little more cooperative with each other.

That concludes my comments. I have filed comments electronically with the docket office. Thanks.

COMMISSIONER BOYD: Thank you.

MR. GOPAL: The next hand that I had seen was David Royes.

UNKNOWN SPEAKER: David had to leave to go to another appointment.

MR. GOPAL: Anyone else wishing to make comments? Yes, please come forward with your name.

MR. WOOD: Let me just finish this.

MR. GOPAL: Okay.

MR. WOOD: I'm Bill Wood. I was sitting beside David Royes, and he indicated he had an appointment at 11:30 that he had to leave to go attend, but he would be filing written comments with us representing the San Diego area.

MR. GOPAL: Okay, thanks, Bill.

MR. BURT: I am Bob Burt representing,

at this point, I think nobody. I'm here for my education, and I suspect since my comments are rather run in the cassandra reign, my clients would rather not be identified with them.

Let me start off to keep the poetic line going by repeating a brief note that I put in my comments on the price forecast workshop, and that is to quote a old Yiddish saying that translates reasonably as, "Man plans, God laughs" and I added to that looking at the current situation, I suspect that God is hilarious.

Now, my first comments is to talk about the implicit assumptions about economy. It is quite apparent that implicit assumptions in these forecasts is that our economy will keep going approximately as it is now and possibly better. I would caution that might be asking too much.

In all past history when a stock market bubble, and let me caution that in the stock market a bubble does not bear the same relation to us that a gas bubble does. A stock market bubble is where prices go to ridiculous levels and then collapses.

In our economic history, this has happened three times, and each time, it has been

followed by a rather lengthy period of very slow economic activity during which period capitol is usually quite short.

The next immediate question that ties to that is that right now the United States is importing approximately $500 billion a year more goods than we are exporting to pay for. That is 5 percent of our gross national product.

The reason that we are getting away with this is that we, the United States, has a history of approximately of two centuries of rather good internal economic management. I don't think we are going to continue to get away with it. At some point, foreigners are going to get tired of accepting IOU's or brightly colored pieces of paper, and they are going to start saying, "Where's the stuff?"

We will see probably a dollar collapse, which would mean that importing anything, including LNG, will involve getting the necessary foreign exchange which will not be easy.

Assuming that we can solve our problems with importing LNG, I think, is not a bright line assumption. That does not necessarily hit us with respect to Canada. Canada makes it living by

exporting to the United States, so if our dollar collapses, I think there's will also collapse.

We can still expect to deal with imports of natural gas from Canada, and most reports are that they have very considerable as yet untapped reserves.

Let me -- after talking about LNG, let me add one additional caution on LNG. I don't want to follow Amory Levin's point by not expanding on dangers, but this particular danger has already been in widely read shoot 'em up novels and so forth, so I think I will mention it.

A LNG tanker is a mega-ton bomb sitting there and in combat engineer language, it needs not much more than a cap and a fuse to make it go off. If we are dealing with people whose intent is not to care whether they make any money, but whether they just hurt us, that is an attractive target, even if it is not going into an urban area. We cannot assume that LNG supplies will be uninterrupted, even if we are managing to pay for them.

One other minor point here is the bland assumption that because there is a world wide stranded gas pile there, I don't think we can

assume that we are automatically going to get imported LNG at 350 here.

Rule of thumb to convert the gas MMBTU into an oil barrel is roughly multiplied by six, so that's saying that we are getting gas at the equivalent of oil at $21 a barrel.

Considering the fact that the world oil market demand is considerably expanding, even if the developing countries of Asia end up using a tenth of what we do in oil, the world oil market will be very tight.

I don't think we can expect to get people to sell us natural gas at the equivalent of $21 a barrel.

What that leads to is saying that we should look at the fact that the United States, theoretically is the Saudi Arabia of coal. That is not really true, the reason that is in the world forecast of world analysis of coal reserves puts the United States at the head is that for 150 years, the USGS has been looking for coal when there is lots and lots of coal elsewhere.

The fact that we have lots here is important because stripped coal is available at BTO cost that is trivial compared to what we are

going to be paying for natural gas. I think we have got to figure out how to use coal, pay for the necessary pollution controls, overcome the other environmental constraints because otherwise we are not going to have energy.

I think the same think applies to NUKE. I think are long term future is going to have to look at NUKE because the other so called non-renewable sources are not that big. As a policy matter, yes, we sure want to do everything we can to expand our natural gas supply, but I think we have to recognize that I don't think long-term it is going to be enough.

As supplemental points, I did accomplish some of what I came here for. I did learn something, I agreed with Kern and their comments and Ferguson's comment on production. He will be gratified to know that the most prominent internet guru has come up with very similar numbers to his and says that we are actually not producing new gas in nearly as much as we are using.

With that, having run through my Cassandra list, if anyone has a question, I'd be happy to answer.

COMMISSIONER BOYD: Thank you for your

comments. I don't think I have any questions, the LNG community may want to rebut your views of tankers, but I will leave it to them, and not to me.

MR. GOPAL: At least I found something which is not -- which is a little more fragile than crystal.

(Laughter.)

MR. GOPAL: We have turn with some additional comments.

MR. HAWIGER: Chairman Keese and Commissioner Boyd, thank you. I just have very short comments to address two additional topics, intrastate capacity and renewables.

This relates partly to a conclusion in the report, page 26, where in discussing what happened during that critical time period of the winter of 2000/2001. I believe the report does a good job summarizing a complex situation, but it does state in the middle of the paragraph there, "The robust demand constrained the existing natural gas transportation infrastructure system and resulted in the inability of the natural gas companies to meet the demand." That is in the middle of the main paragraph on page 26.

I think, technically, that conclusion is incorrect. There was never any curtailment or diversion or inability of the intrastate gas transportation system to meet demand in 2000/2001 as opposed to, for example, in December of 1998, when there were actual curtailments on the PG&E gas system due to constraints on the local transmission system not the backbone transmission system.

I think that is a very important issue, and that is why it should be looked at. It goes to the heart of this question of do we need more intrastate capacity, intrastate pipeline capacity? Mr. Morgan over there made a recommendation that we should have additional slack capacity in order to provide the flexibility to inject gas into storage.

Now, I think that is a very interesting question, and I would offer up the concern that turn has, and that is this flexibility would be flexibility for non-core customers who, for example, buy from Kern River to inject gas into storage. The people who would pay for the additional slack capacity, if the utilities constructed additional intrastate pipeline

capacity, would be all customers including the core customers.

We are concerned about that because if we are going to pay for additional intrastate pipeline capacity in order to provide flexibility to put gas into storage, and especially gas into storage to meet the reliability needs for electric generation, then we want to have some assurance that indeed we will get additional gas into storage.

That flexibility, that capacity, will not just lie there unutilized. That is why I think that if something like that happens, we need to address policies to make sure that gas does go into storage, or that this state somehow creates a natural gas storage reserve in the same way that this Commission is looking at a petroleum gas storage reserve.

Second, just touching briefly on the issue of renewables. I would encourage maybe some consideration of the potential impact on demand of additional renewable electric generation.

The report looks at various scenarios, including a high and low scenario of investment an energy efficiency. Now energy efficiency would

decrease end use gas demand, but not gas demand for electric generation which is driven by electric generation end use efficiency.

The potential to -- I believe the report assumes renewables in the proportion as dictated by the renewable portfolio standard legislation. I think it might provide additional food for thought and valuable policy insight to provide maybe a high and low case scenario of using additional renewable generation.

What that would do to electric generation demand, and thereby potentially natural gas prices.

Thank you very much for letting me speak a second time.

COMMISSIONER BOYD: Thank you for your comments.

MS. GRIFFIN: I'm Karen Griffin, the Program Manager for this activity. I just wanted to explain that we did actually do that, and it was discussed yesterday. That was to have a high and low DSM renewable infrastructure and to see what the impact would be on natural gas supply and price.

It was about a 7 to 9 percent decrease

in electricity use, I mean in natural gas use in the electricity sector with that high scenario that had about a five cent impact on natural gas prices.

MR. GOPAL: Thank you, Karen. Are there any other questions, points to be made. Okay.

DR. ARTHUR: Dave Arthur, City of Redding. I think you have my card from yesterday.

There are a couple of areas that I think were touched on, and this may or may not be the forum where it is addressed in light of the responses, but the first point is it seems to me that as at least a substantial purchasers of natural gas for our power plant, the issue of volatility needs a lot of attention because what as a community we finally pay for gas is very much a function of the portfolio we put in place and the timing of those purchases.

While it is important to look at sort of a trend line, it is at least as important to look at the timing of decisions regarding the actual acquisition, so I think it would be useful to have explicit attention directed toward the issue of volatility.

That could also relate to the kinds of

latitudes that you give to the regulated utilities in terms of being able to have some discretion in the purchase and how that kind of discretion might lead to longer term lower prices for their customers as well.

A second issue has to do, and it is related to this, has to do with an enormous deterioration that has occurred in what they call the mid-market aspect of the gas market.

The City of Redding has essentially been informally notified but will soon be notified by in Encana that it really doesn't wish to do business in California, and that they will be seeing to transfer what we think is a very good arrangement to someone else.

I think we have to look at this as a loss when highly regarded important companies make decisions to no longer provide important services within our state, and I would hope the report would look also at sort of the mid-market issues related to that what appears to be a serious problem in the reporting of information and how that affects the issues of indexing and other kinds of factors that get to the commercial aspects that very much affect at the end of the

day what we actually pay for the product itself. I guess you would call those institutional factors.

Those would be two areas that hopefully get some additional attention as we move forward, that at least from our experience have a profound impact on what you actually pay for the product over time.

Thank you.

COMMISSIONER BOYD: Thank you.

MR. GOPAL: All right. Before -- oh, Chris.

MR. PRICE: I'm Chris Price with Encana Gas Storage, and I just want, in reference to the last comment when Dave made the statement that Encana does want to get out of California, I think that had to do with the Encana Marketing Group. It has nothing to do with the Encana Gas Storage Group.

Thank you.

MR. GOPAL: Thank you for that confirmation, Chris.

Before the Committee winds up the workshop, I believe Dave has some closing comments to make. On my part, I would like to thank you,

and I would like to keep this communication up while we are continuing to work on this.

At this point, I want to recognize another person who has been instrumental in a lot of the work that we do, and that is Minon Marks, she walked in just now.

MR. MARKS: Thank you, Jairam. This has been a very helpful workshop for us at a staff level. We have had most of our gas staff for a particular reason, and that is to listen to all of you, the concerns and issues that you have raised, as well as the questions from the Committee.

I want to assure everybody in the audience as well as our Commissioners that this is not a one time event from the Staff's perspective.

There are really two activities going on here. One is the IEPR activity that the Commission Committee is leading, and we will be supporting the Commission Committee through Karen Griffin and Al Alvarado through the coming months here to prepare the final report that goes out.

As the Commission Committee listens to your concerns and identifies key topics they want us to address and provide additional analysis on, we will be doing that over the next few months.

Also, and probably more importantly, we will be doing another one of these reports in about a year from now, but that does not mean that we go away and you don't see us for a year. In fact, what we intend to do is have a number of targeted small studies. If you noticed in Jairam's final slide under conclusions, there were some key topics that we thought were important to address.

We are taking into account those topics as well as your concerns, the issues that you have raised today, and that basically puts forward the work plan process for our staff for the next year.

The key topics that we think needs additional work, needs targeted studies, need additional fact finding, and need additional analysis, and we will be conducting that in a public forum with our colleagues at the other state agencies as well as with the market participants here.

If you are on the natural gas server list from our website, and do check our website frequently, you will see additional notices for events like this, but on very small targeted studies over the next twelve months, and we hope

that you do participate in those events and bring your concerns forward because we need to provide a very balanced perspective back to our Commissioners.

With that, I do wish to thank our Staff's presentation today, and thank you for attending. Commissioners, it is yours.

COMMISSIONER BOYD: Dave, thank you. I'm glad you added those comments. Excuse me, I want to add my thanks to everyone for testifying and commenting today, and I encourage you to augment your comments or those that didn't comment to submit written comments to the staff within the deadline that may or may not have established.

I will leave it to Al to remind us of that when I finish, but frankly, I think many of you put some very good policy issues on the table.

What this agency struggles with is what every agency struggles with, incredible demands to do work, not enough dollars, and staff, and probably dwindling in today's budget climate, staff to do that.

We have a responsibility to present a report this November that raises policy issues, and it is hard to do that without looking at the

whole system, not just by looking at outputs of long-term crystal ball trends by models, which are just tools, so we will have to integrate a lot of the issues you put on the table today with the forecast.

I've been around a long time and been burned by model forecasts repeatedly through my lifetime, so I can appreciate the scattergram that was put upon the wall earlier today with regard to past estimates of where we might be going versus where we have ended up going.

Models have a tough time handling human behavior, which has to be integrated into our forecasts, and thus our analysis of what policy issues might be, so I appreciate that. This is a neverending chore. As I said in opening up this today, the legislature asks for the full report every two years, but asks for a permitted annual updates, and this is a dynamic ever accelerating world, and these issues change so frequently that we will just have to do that as Dave kind of said on a real time basis.

With that, I will just thank you all and save my reactions for some discussions with Staff on what more needs to be done.

Chairman Keese anything?

CHAIRMAN KEESE: No.

COMMISSIONER BOYD: Al, deadline for comments?

MR. ALVARADO: Deadlines. What we are shooting for is if you can provide any written comments by June 20, and the other target date that we are shooting for is the draft of the Electricity and Natural Gas Report, which again we are expecting to release, posting it on our website by July 25.

CHAIRMAN KEESE: Thank you.

COMMISSIONER BOYD: Thank you all. I will see some of you back here tomorrow if you are so inclined.

(Whereupon, at 12:15 p.m., the workshop was adjourned.

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CERTIFICATE OF REPORTER

I, ALAN MEADE, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Workshop; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 20th day of June, 2003.